Department of Science and Health
CLERMONT COLLEGE

SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: March 1, 2013

The Department of Science and Health is pleased to offer the following research project for the summer of 2013. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and, if possible, develop a timetable for the twelve-week research period.

PROJECT TITLE: Automata Thermoregulation: a null model

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Project Description

We will study the temperatures of automata programmed to walk about on a thermal gradient. These automata will have some simple algorithms to respond to the presence of barriers such as walls in the thermal gradient. As the automata move on the thermal gradient, substrate temperatures will be measured along the way. These temperatures will be contrasted against the temperatures of lizards tested on the same thermal gradient. Therefore, the temperatures associated with the automata movement will be a thermoregulatory null model. This null model will be associated with the algorithms used to create each movement pattern. All data collected from this study will be contrasted with thermal data from the wall lizard *Podarcis muralis*.

Thermoregulation is fundamental for lizards and for all animals unable to generate enough heat to regulate body temperature. By studying thermoregulation, one obtains insight into important physiological, behavioral, and ecological relationships. Studies using similar techniques have changed our understanding of fever and other thermal states of the human body.